

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/01/12

Date Received: 10/19/12

Project: 1198001.010.011, PO M09475, F&BI 210321

Date Extracted: 10/22/12

Date Analyzed: 10/30/12

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL AND MOTOR OIL
USING METHOD NWTPH-Dx
Sample Extracts Passed Through a
Silica Gel Column Prior to Analysis
Results Reported as ug/L (ppb)**

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> (% Recovery) (Limit 51-134)
CB330001-101912 210321-01	<50	<250	88
CB331707-101912 210321-02	<50	<250	97
Method Blank 02-1913 MB	<50	<250	80

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Analysis For Total Metals By EPA Method 200.8

Client ID:	CB330001-101912	Client:	Landau Associates
Date Received:	10/19/12	Project:	1198001.010.011, F&BI 210321
Date Extracted:	10/23/12	Lab ID:	210321-01
Date Analyzed:	10/23/12	Data File:	210321-01.034
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	105	60	125
Holmium	94	60	125

Analyte:	Concentration ug/L (ppb)
Copper	35.4
Zinc	38.8
Lead	1.77

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Analysis For Total Metals By EPA Method 200.8

Client ID:	CB331707-101912	Client:	Landau Associates
Date Received:	10/19/12	Project:	1198001.010.011, F&BI 210321
Date Extracted:	10/23/12	Lab ID:	210321-02
Date Analyzed:	10/23/12	Data File:	210321-02.035
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	105	60	125
Holmium	95	60	125

Analyte:	Concentration ug/L (ppb)
Copper	55.5
Zinc	1,160
Lead	1.21

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Landau Associates
Date Received:	Not Applicable	Project:	1198001.010.011, F&BI 210321
Date Extracted:	10/23/12	Lab ID:	I2-720 mb
Date Analyzed:	10/23/12	Data File:	I2-720 mb.023
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	106	60	125
Holmium	100	60	125

Analyte:	Concentration ug/L (ppb)
Copper	<5
Zinc	<1
Lead	<1

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Date of Report: 11/01/12

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**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-Dx**

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	121	139 vo	58-134	14

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Date of Report: 11/01/12

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**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF WATER SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 210318-09 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Copper	ug/L (ppb)	20	<5	105	112	52-134	6
Zinc	ug/L (ppb)	50	26.5	101 b	110 b	51-142	9 b
Lead	ug/L (ppb)	10	<1	97	104	85-115	7

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Copper	ug/L (ppb)	20	94	81-120
Zinc	ug/L (ppb)	50	95	82-120
Lead	ug/L (ppb)	10	88	84-120

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Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 - More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

210321
LANDAU ASSOCIATES

☒ **Seattle/Edmonds** (425) 778-0907
☐ **Tacoma** (253) 926-2493
☐ **Spokane** (509) 327-9737
☐ **Portland** (503) 542-1080
☐ _____

Please Bill Alaskan Copper ME 10/19/12
P.O. # MØ9475

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AKC-0003506

Chain-of-Custody Record

[illegible]

WHITE COPY - Project File

YELLOW COPY - Laboratory

PINK COPY - Client Representative

Rev 6/09

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ENVIRONMENTAL CHEMISTS

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November 1, 2012

Joe Kalmer, Project Manager
Landau Associates
130 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Kalmer:

Included are the results from the testing of material submitted on October 19, 2012 from the 1198001.010.011, PO M09475, F&BI 210321 project. There are 7 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Matthew Langston
Project Manager

Enclosures
NAA1101R.DOC